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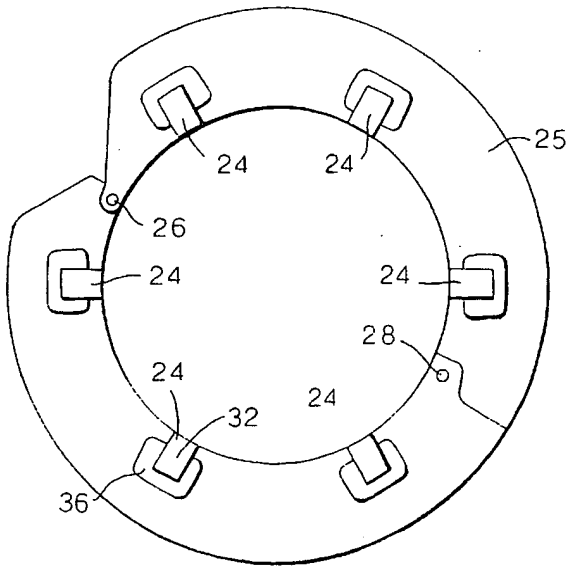
(54) Title: DETECTING FAILURES OF FLEXIBLE MULTISTRAND STEEL STRUCTURES



(57) Abstract: A flexible elongate structure, such as a flexible riser (10), comprising at least one layer (20) of steel wires near the surface which extend at least partly along the length of the structure, can be monitored by inducing a small, alternating magnetic field in the steel wires using an electromagnetic coil, and monitoring the magnetic flux density near the surface of the structure so as to asses the stress and hence detect if any wires have broken. By using an array of stress-measuring electromagnetic probes (24) around the structure some spatial resolution can be provided as to the location of any break in the wires.

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